USSR

KLOYZNER, I., Sotsialisticheskaya Industriya, 10 Oct 70, p 3

the area of ribbon machines by a factor 2.4. Widespread use of these devices
will not only reduce yarn pollution by about 30 percent and thread tearing by
about 15 percent, but will also reduce the frequency of diseases, nervous
tension, and work intensity in subsequent production stages.
    In recent years, the Kostroma Technological Institute has introduced
dozens of new equipment models into production. They meet hygiene require-
ments and include tight sealing, spot illumination, and pneumatic removal of
dust. Nevertheless, some modern machines do not meet current physiological and
hygienic norms.
    Health protection laws specify that new technological processes must be
approved by the Sanitary Epidemiological Service. Nevertheless, the country's
and the republic's ministries of light industry and of machine-building for
light industry and the food industry continuously endorse serial production of
new machines without this approval. The commission which inspects preliminary
production often includes no members of the sanitary service.
    I should like to mention one more thing. Enterprises and scientific
research institutes must have laboratories for controlling the enforcement of

3/4

USSR

KLOYZNER, I., Sotialisticheskaya Industriya, 10 Oct 70, p 3

sanitary and hygienic norms. However, for reasons unknown, the Kostroma
Scientific Research Institute of the Flax Industry still has no such labora-
tory.

4/4

USSR

KLOYZNER, S. M., KOSMODAMIANS'KYY, Corresponding Member of Ukrainian Academy of Sciences O. A. (Donetsk State University)

"Double-Periodic Nonlinear Problem for Plate with Curvilinear Holes Supported by Rigid Rings"

Kiev, Dopovidi Akademii Nauk Ukrains'koi RSR: Seriya A - Fizyko-Tekhnichni ta Matematychni Nauky; August 1970, pp 713-716

Abstract: The authors suggest a method based on the use of a Cauchy-type integral for the solution of a nonlinear problem concerning the stressed state of a plate weakened by a double-periodic system of curvilinear holes. The problem is defined by the equations

$$\varphi^{(j)}(z + P) = \varphi^{(j)}(z); \quad \psi^{(1)}(z + P) = \psi^{(1)}(z) - \bar{P}\varphi^{(1)'}(z);$$

$$\psi^{(2)}(z + P) = \psi^{(2)}(z) - \bar{P}\varphi^{(2)'}(z) - C\bar{P}\,[\varphi^{(2)'}(z)]^{11}.$$

Here j = 1, 2 is the number of observations; z, $\bar{z}$ are the complex coordinates of the deformed state of the plate; $P = m\omega_1 + n\omega_2$ (m, n = 0, $\pm$ 1, $\pm$ 2, ...); C is a constant expressing the elasticity of a steel plate.
1/2

USSR

KLOYZNER, S. M., KOSMODAMIANS'KYY, Dopovidi Akademii Nauk Ukrains'loi RSR: Seriya
A - Fizyko-Tekhnichni ta Matematychni Nauky; August 1970, pp 713-716

For the case in which the holes weakening the plate are elliptical the problem
reduces to the solution of an infinite system of quasi-regular algebraic equa-
tions.

The article includes seven equations. There are four references.

1/2   024   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--NONLINEAR PROBLEM OF A PLATE WEAKENED BY A DOUBLY PERIODIC SYSTEM
 OF CIRCULAR HOLES -U-
AUTHOR-(02)-KLOYZNER, S.M., KOSMODAMIANSKIY, A.S.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA TVERDOGO TELA, MAR.-APR.
 1970, P. 175-178
DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PHYSICS

TOPIC TAGS--HOLE IN STRUCTURE, STRESS CONCENTRATION, THIN PLATE, FLAT
 PLATE, POLYSTYRENE RESIN, TENSILE TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0351   STEP NO--UR/0484/70/000/000/0175/0178

CIRC ACCESSION NO--AP0124108
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0124108

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE STRESSED STATE OF
  A POLYSTYRENE PLATE WEAKENED BY A DOUBLY PERIODIC SYSTEM OF EQUAL
  CIRCULAR HOLES, USING A CARTESIAN COORDINATE SYSTEM WHOSE ORIGIN IS IN
  THE CENTER OF ONE OF THE HOLES. THE EXTERNAL LOADS ARE CHOSED IN SUCH A
  MANNER THAT THE STRESSES DEVELOPING IN THE PLATE ARE DOUBLY PERIODIC
  FUNCTIONS, WITH THE PRINCIPAL LOAD VECTOR ON EACH HOLE PERIMETER BEING
  ZERO. EXPRESSIONS ARE DERIVED TO DESCIRBE THE STRESSED STATE OF THIS
  PLATE WITH THE AID OF THE KOLOSOV MUSKHELISHVILI COMPLEX POTENTIALS, AN
  EXAMPLE OF THE APPLICATION OF THESE EXPRESSIONS TO A POLYSTYRENE PLATE
  UNDER TENSION APPLIED AT INFINITY IS GIVEN, SHOWING THAT OMNILATERAL OR
  UNIAXIAL TENSILE LOADS APPLIED AT INFINITY LEAD TO A REDUCTION OF THE
  STRESS CONCENTRATIONS IN THIS PLATE.   FACILITY: DONETSKII
  GOSUDARSTVENNYI UNIVERSITET, DONETSK, UKRAINIAN SSR.

UNCLASSIFIED

Acc. Nr: *AP0052088*   *KHRULEVA* · N.
Ref. Code:

THE INFLUENCE OF INDOPAN ON THE HIGHER NERVOUS ACTIVITY OF DOGS

L. N. Khruleva

The author studied the influence of different dosages of indopan on the higher nervous activity of dogs. It was displayed that indopan is an active preparation and in certain doses may have a durative stimulating effect. As all the stimulators of the central nervous system, indopan possesses a 3 phasic action: in small doses (from $0.1-0.25$ mg/kg) it inhibits conditioned reflexes; in middle doses (0.5 mg/kg and somewhat more) it acts as an expressed stimulator. In large doses ($1.0-1.5$ mg/kg and higher) it again calls on an inhibition of reflexes. The effect of indopan depends not only upon the doses and typological features of the animal nervous system, but from the initial functional states of the higher areas of the CNS.
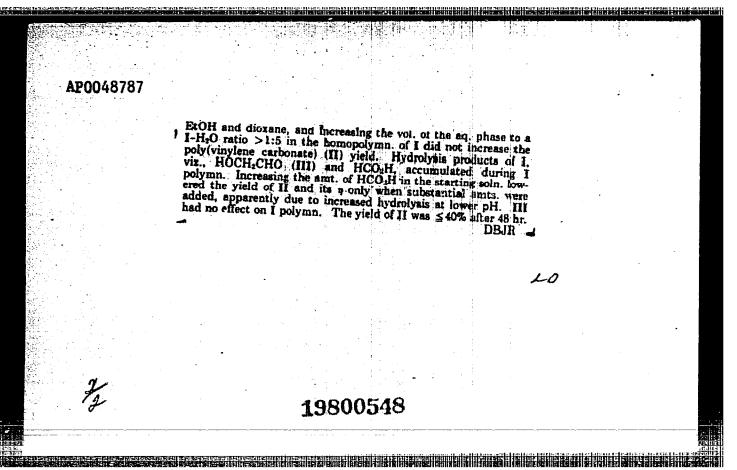
REEL/FRAME

19820626

90914q Initiation of the polymerization of some vinyl mono-mers by aqueous solutions of vinylene carbonate. Kuznetsov, Yu. A.; Golenishcheva, S. A.; Klubikova, L. E.; Klimova, O. M. (USSR). Zh. Prikl. Khim. (Leningrad) 1970, 43(1), 141-4 (Russ). CH_2:CHCONH$_2$ (Ia), MeCH:CHCO$_2$H (Ib), CH$_2$:CHCN, CH$_2$:CHOAc (Ic), and PhCH:CH$_2$ were polymd. at 20-60° in H$_2$O in the presence of vinylene carbonate (I) and O. The highest yields of polymer (92-5%) were obtained when the monomer and polymer were completely H$_2$O-sol. (Ia and Ib). Increasing the temp. shortened the induction period due to acceleration of I hydrolysis, but the intrinsic viscosity (η) of the polymers decreased. It was preferable to decrease the induction period by introduction of the initiator (aq. I) after prior treatment at 60-70° for 1-2 hr. This treatment decreased the induction period in the polymn. of Ic at 20° to ≤10-20 min (compared with 5-6 hr), and did not decrease η. A 1% aq. soln. of I preserved its initiating ability for >12 days. Introduction of hydrotropic agents such as

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REEL/FRAME

19800547

AP0048787

EtOH and dioxane, and increasing the vol. of the aq. phase to a I-H$_2$O ratio >1:5 in the homopolymn. of I did not increase the poly(vinylene carbonate) (II) yield. Hydrolysis products of I. viz., HOCH$_2$CHO (III) and HCO$_2$H, accumulated during I polymn. Increasing the amt. of HCO$_2$H in the starting soln. lowered the yield of II and its η only when substantial amts. were added, apparently due to increased hydrolysis at lower pH. III had no effect on I polymn. The yield of II was ≤40% after 48 hr.

DBJR

19800548

Acc. Nr. *AP0053760* — Abstracting Service: Ref. Code
                              CHEMICAL ABST.   6-70   UR0080

112011x Degradation of copolymers of vinylene glycol with vinyl alcohol and ethylene under the influence of alkali. Klimova, O. M.; Klubikova, L. E.; Duvakina, N. I.; Zentsova, G. A. (Leningrad. Tekhnol. Inst. Im. Lensoveta, Leningrad, USSR). Zh. Prikl. Khim. (Leningrad) 1970, 43(1), 217-20 (Russ). Poly-(vinyl alc.) (I) (contg. 1.3 mole % α-glycol units), vinyl alc.-vinylene glycol (II) copolymers (III) (contg. 8.9 and 15 mole % α-glycol units), and II-ethylene copolymers (contg. 6 and 13 mole % II) were subjected to oxidative thermal degradation at 70 ± 1° for 3 hr. Increased content of α-glycol units in III gave higher oxidative degradation resistance and resistance to a 40% aq. KOH soln. Introduction of glycol units into I increased the stability presumably by the formation of intramol. H bonds, which inhibited dehydration.

CKJR

REEL/FRAME
19830823

USSR   UDC 614.777:[615.277.4:547.53

IL'NITSKIY, A. P., YERSHOVA, K. P., KHESINA, A. YA., ROZHKOVA, L. G.,
KLUBKOV, V. G., and KOROLEV, A. A., Institute of Experimental and Clinical
Oncology, Academy of Medical Sciences USSR, Institute of General and Communal
Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR, and First
Moscow Medical Institute imeni I. M. Sechenov

"Stability of Carcinogens in Water and Effectiveness of Decontamination
Methods"

Moscow, Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Abstract: Polycyclic aromatic hydrocarbons, especially benzpyrene, can re-
main main active in water a long time and spread to considerable distances from
the source of contamination. The wide distribution of these carcinogens
in water is promoted by the presence of certain substances that help them to
dissolve, e.g., surfactants which at concentrations of 10 to 50 ng/Ll can
increase the solubility of benzpyrene as much as 10-fold. Certain purifi-
cation methods (ultraviolet irradiation, chlorination, ozonization, gamma
irradiation) decrease the concentration of the carcinogens in varying degrees.
Ozonization is the most effective, gamma irradiation the least effective.
1/2

USSR

IL'NITSKIY, A. P., et al., Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Experiments showed that bacteriological indicators (e.g., the coli titer) following the use of ultraviolet or gamma rays reveal little about the presence or absence of carcinogenic hydrocarbons. Sixty minutes' boiling of water containing benzypyrene at a concentration of 0.002 to 0.002 μ g/L neutralized most of the compound.

2/2

USSR

SEVERDENKO, V. P., Academician, Belorussian Academy of Sciences, KLUBOVICH, V. V., and KONYSHEV, L. K.

"Computing Operating Stresses in Drag With Superposition of Longitudinal Ultrasonic Oscillations"

Abstract: The two methods most used for computing drag stresses in tubes and other devices with continuous circular profile are the method of characteristics and the method of averaged values. Using the latter, the authors find an expression for these stresses with longitudinal ultrasonic oscillations applied to the deformation focus. They begin their analysis by considering a small element of the surface of a solid consisting of two tubes of different diameter connected by a conical section. From this, they derive the equation of its equilibrium by assuming that the force of friction is proportional to the normal pressure. By using the curve

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USSR

SEVERDENKO, V. P., et al., Doklady Akademii nauk BSSR, Vol 14, No 9, 1970, pp 812-815

of the yield point for the tube metal plotted as a function of the amplitude of the ultrasonic oscillations, the drag stresses may be computed for partic- ular cases through the equations derived. The authors are connected with the Physics-Technical Institute, Belorussian Academy of Sciences.

2/2

PHYSICS
Acoustics

SEVERDENKO, V. P., Academician of the Academy of Sciences BSSR; KLUBOVICH, V. V.;
KONYSHEV, L. K.; REPIN, R. A., Physicotechnical Institute, Academy of Sciences
BSSR

"Drawing of Wire From Strainproof   Materials With the Application of
Longitudinal Ultrasonic Vibrations"

Abstract: Drawing of titanium, molybdenum, manganese nickel NMts 2.5 and stain-
less steel of various dimensions and different initial states was studied under
the application of longitudinal ultrasonic oscillations and without them. The
investigations were conducted on a testing machine with a drawing rate of 20-
-150 mm/min. The effectiveness of the action of acoustical energy on the metal
being drawn was basically a function of the intensity of the ultrasonic oscilla-
tions applied to the deformation focus. The tests showed that a supply of ultra-
sonic energy to the deformation focus has a considerable effect on the force
conditions of the drawing process. The relative drop in drawing force can
reach 80%. A comparison of the drawing of wire from annealed and hardened

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USSR

SEVERDENKO, V. P., et al, Physicotechnical Institute, Academy of Sciences BSSR

manganese nickel shows that the effectiveness of the action of ultrasonics on the drawing force somewhat increases with a growth in the degree of hardening. The effectiveness of the action of ultrasonic oscillations on the force conditions of the drawing changes with a change in the drawing rate. If the drawing force was 22 kg at a rate of 22 mm/min, the drawing force increased to 28 kg at a rate of 150 mm/min for the same intensities of the ultrasonic oscillations. It is also shown that if ultrasonic oscillations are applied in rolling, the breaking point of the metal drops somewhat and the plastic properties rise. This is attributed to a decrease in the shear and a partial softening of the metal during deformation under the action of the alternating stresses of the ultrasonic frequency.

2/2

- 50 -

USSR

KLUDZIN, V. V.

"Ultrasonic Light Modulator Based on Lithium Niobate Single Crystals"

Translation: The creation of US light modulators for optical-acoustical
processing of radio signals is limited by the attenuation of elastic
oscillations in most materials used as US light modulator sound guides.
Parameters are presented of models of US light modulators based on
$LiNbO_3$ crystals in the 30-50 MHz frequency range. The possibility is
demonstrated of constructing US light modulators in the frequency range
up to 1000 MHz using nonresonant excitation of US waves. Thus, US light
modulators based on $LiNbO_3$ crystals can increase the parameters of
optical-acoustical radio signal processing devices. 3 figures, 1 table,
3 biblio. refs.

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2

UDC   616.988-614.4

USSR

RETINA, T. N., POVALISHINA, T. P., MARTSINKEVICH, Ch. I.,
VASYUTA, Yu. S., KLUG, L. S., and FILIPPENKOVA, Ye. D., Republic
Sanitary Epidemiological Station of the Bashkir SSR, Institute
of Poliomyelitis and Viral Encephalitides of the USSR Academy of
Medical Sciences, Main Sanitary Epidemiology Administration, of
the RSFSR Ministry of Health, and the Ufa City Sanitary Epidemio-
logical Station

"Epidemiological Analysis of Hemorrhagic Fever Diseases With a
Renal Syndrome Observed in Health Institutions in the City of
Ufa"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 1, Jan/Feb 71, pp 74-
76

Abstract: The 1964-1965 epidemic of hemorrhagic fever with a
renal syndrome in the Bashkir ASSR was thoroughly analyzed to
elucidate the source and route of infection. A total of 99 cases
of the disease were recorded in the resort city of Ufa among
students, employees, and tourists: 11 cases in the pioneer
camp, 13 in the Sanitary Forest School, 34 in the Children's
Tuberculosis Sanatorium, and 41 cases at the rest home. During

1/2

USSR

RETINA, T. N., et al., Kazanskiy Meditsinskiy Zhurnal, No 1,
Jan/Feb 71, pp 74-76

the epidemic, the Ufa region was infested with rodents; field
and house mice and voles were found in attics and basements and
under porches of poorly constructed houses and in the forest.
The pathogen was transmitted mainly through the air to indi-
viduals who breathed air with dust-containing particles emitted
by infected rodents. This included persons working within
buildings, sleeping in tents, or employed in field work. The
main preventive measure is eradication of rodents living in
buildings and in natural environments.

2/2

USSR

ZARINSKIY, V., KLUG, O.

"Third International Symposium on Oscillometry"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 5, May 70,
pp 1030-1031

Abstract: The Third International Symposium on Oscillometry, organ-
ized by the Slovak Chemical Society, the Slovak Academy of Sciences,
and by the Hungarian Chemical Society was held Sep 22-24, 1969 in
Gorne Smakovtse, Czechoslovakia. Seventeen papers were delivered
on the theory, instrumentation and analytical application of high
frequency method. E. PUNGOR reviewed new modifications of the
electroanalytical methods -- high frequency, dielkometric and
potentiometric. V. LI reported data on the use of electrolytic cell
as noise generator. The papers of R. BERTRAM and L. PAZHITEK,
R. BERTRAM and SH. PETEFALVI, and O. KLUG, et al, covered original
diagrams and construction of instruments. G. SHTUGETS proposed a
diagram for an automatic titrator, and F. VALLO reported on analyses
of industrial aqueous solutions of aluminates. V. SKOTT and
1/2

USSR

ZARINSKIY, V., et al, Zhurnal Analiticheskoy Khimii, Vol 25, No 5,
May 70, pp 1030-1031

S. SHVEKLA talked about their work in analysis of inorganic sub-
stances using a titrator developed by them. Measuring character-
istics of inductive cells were analyzed by A. BELLOMO. Several new
types of humidity-dielkometers were discussed by SH. NADYA, B.
VARGA, and G. SABO. F. AKKERMAN and G. FREY reported on complexo-
metric titration of trivalent and divalent ions. L. BALAZA and
E. PUNGOR determined sulfate ions in various wines. K. GOKHMAN
determined calcium in ferromagnetic garnets. Experimental data on
determination of barium in ferrites and in semiconductors were dis-
cussed by E. PAL'DA. V. TALASHEK and YA. ELIASHEK reviewed studies
on the kinetics of diffusion and ion exchange on ion exchange resins.
Finally, SH. NAD' and A. KISH described the thermodielectric method
and the method of dielectrometric spectroscopy.

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USSR

UDC 615.787:612.014.46

SHIKHLIYEV, I. A., AKHUNDOV, E. A., MOVSUMZADE, E. M., ISAYEV, E. M., and KLIGYL', T. A.

"The Synthesis and Psychotropic Properties of Some Acetylene Derivatives of Phthalimide"

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, Vol 50, No 3, Mar 73, pp 14-18

Abstract: In earlier work by the authors of this article, the synthesis of 3-phthalimido-1-propyne and of some of its amino derivatives was investigated. In the present work the neuropharmacological characteristics of the compounds of this type that had been synthesized were subjected to study in experiments on white mice. The preliminary pharmacological study indicated that some of the compounds of this class resembled with respect to their activity tranquilizers of the unsaturated carbinol type such as ethchlorovinol, oblivon, and oblivon K.

1/1

Acc. Nr: AP0047362

Ref. Code: UR0589

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1 , pp 87-89

SOME CAUSES OF LATE DIAGNOSIS IN CANCER OF THE COLON

By S. N. Mamykin and A. M. Klunichenko

In the article the diagnostic errors in 106 operated patients with carcinoma of the colon (excluding the rectum), observed in surgical departments of the city hospital and the city oncological dispensary, are analysed.

AA0040659_ K   Klurfeld, I.M.

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, /-70

241486 THERMAL STRAIGHTENING OF THINWALLED FINNED
CYLINDERS reduces residual strain by heating
the peripheral parts of the fins and outer case
of the cylinder to 300-350°C to cope with alloy
steel blanks. The thinwalled, split turbine low
pressure cylinder has its peripheral fin parts
heated as stated and once the peripheral zone has
heated through and the outer case, forces begin
to operate from inside in the bolt bores joining
the cylinder and these produce a moment which
bends each half of the cylinder relative to an
axial plane perpendicular to the horizontal joint
plane and in a direction opposite to the bend which
occurs during the primary deformation of the cylinder.
Thus this moment restores the concentricity.
22.1.68 as 1213096/22-1. KNABE.A.G.et al (28.8.69)
Bul 14/13.4.69. Class 18c. Int.Cl. C 21 d.

19750248

AA0040659

AUTHORS: Knabe, A. G.; Shilin, Yu. P.; Klurfel'd, I. M.; and
           Ostrovskiy, S. I.

19750249

USSR

UDC 615.216.5.015

KIMENIS, A. A., KLUSHA, V. YE., and GINTERS, YA. YA., Laboratory of Pharma-
cology, Institute of Organic Synthesis, Academy of Sciences Latvian SSR, and
the Clinic of the Chair of Faculty Surgery, Riga Medical Institute

"Pharmacology of Dioxonium -- a New Muscle Relaxant"

Abstract: Dioxonium has a curarizing activity which exceeds d-tubocurarine by
a factor of 22, decamethonium by a factor of 2, and diplicin by a factor of 246.
Animal experiments and clinical observations indicate that dioxonium affects
neither hemodynamics nor pupil diameter. The drug has a compound mechanism of
action. Its H-cholinomimetic activity in the smooth abdominal muscle of the
frog is lower than that of ditiline (celocaine) by a factor of 172, it displays
a greater affinity for specific H-cholinoreceptors, but it has a lower internal
activity than ditiline and decamethonium. In experiments on cats and pigeons,
the depolarizing property of dioxonium predominates. However, in human patients,
dioxonium functions primarily as an antidepolarizing muscle relaxant. Proserine
is its most effective antagonist.

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SOKOLOV, G. P., KIMENIS, A. M., KRESHOP, D. K., KLUSHA, V. YE., and GILLER, S.A.,
Institute of Organic Synthesis, Acad. Sc. LatvSSR, Riga

"Synthesis and Pharmacological Properties of Sebacic Aldehyde Cyclic Diacetals"

Abstract: Sebacic aldehyde was synthesized by catalytic reduction of sebacyle
dichloride over palladium in xylene and without isolation was immediately
converted to the diacetal by reacting it with ethyl orthoformate, from which
the cyclic diacetal was obtained by transacetylation with glycerine α-mono-
chlorohydrine in toluene. Heating the cyclic diacetals with pyrrolidine or
dimethylamine gave quaternary salts which were eventually converted to the
diiodides. The cyclic diacetals show myonesin-like properties exceeding the
activity of succinaldehyde, but showing lower toxicity. The quaternary salts
exhibited high curare-like activity, their action resembling closely that of
succinaldehyde derivatives.

1/1

UDC 615.787

USSR

KLUSHA, V. Ye., KIMENIS, A. A., and KURGANE, V. V. Order of Labor Red Banner Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"Effect of Thiocholine Esters of Furan- and 5-Nitrofurancarboxylic Acids on Cholinergic Processes"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 7(276), 1970, pp 103-110

Abstract: It was found that furan- and 5-nitrofurancarboxylic acids affect cholinergic processes. The principal indication of this action is a two-phase nicotinelike effect which includes an excitation effect on the chemoreceptors of the carotid bodies when the compounds are administered intravenously. In experiments with adrenal gland preparations in situ, the compounds increased the epinephrine supply to the blood. The second-phase nicotine-like effect involves ganglioblocking and a curarizing action. A slightly active M-cholinomimetic component was found in both compounds. Introduction of a nitro group produced no significant differences in the pharmacological activity of the compounds.

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UNCLASSIFIED   PROCESSING DATE--19JUN70

TITLE--FIRST SEISMIC INVESTIGATIONS ON THE PRIPYAT SWELL -U-

AUTHOR--CHEKUNOV, A.V., LIVANOVA, L.P., KLUSHIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--GEOFIZICHESKIY SBORNIK, KIEV, 1970, NR 33, PP 32-38

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEISMIC WAVE, GEOLOGY, GEOPHYSIC METHOD, CRYSTALLINE ROCK
LAYER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1977/0391   STEP NO--UR/0000/70/000/033/0032/0038

CIRC ACCESSION NO--AT0043963
                         UNCLASSIFIED

Acc. Nr:
A770043963

Ref. Code: *UR0000*

PRIMARY SOURCE: Geofizicheskiy Sbornik, Kiev, 1970, Nr 33,
pp. 32-38

FIRST SEISMIC INVESTIGATIONS ON THE PRIPYAT SWELL

A. V. Chekunov, L. P. Livanova, V. I. Klushin

(Institute of Geophysics, Academy of Sciences, Ukrainian SSR)

Summary

The results are given of the first seismic investigations in the southern part of the Pripyat swell. The characteristic of the wave picture is presented. The structural constructions were conducted along the surface of the crystalline basement. The main tectonic dislocations and contacts are distinguished. The correlation with the data of geology and other geophysical methods was made.

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REEL/FRAME
19770391

USSR

ZHITKOVA, M. B., KLUSHIN, V. N., PORTNYAGIN, A. I., SHOKIN, A. A.

"Continuous Laser With a Vortex Lamp"

Translation: The effect of the heat condition on the parameters of the active element of a YAG-Nd crystal under continuous pumping is analyzed. It is shown that in theoretical calculations it is necessary to take into account the variation, with temperature, of the crystal characteristics at high pumping levels. The laser pumping efficiency using krypton arc tubes is compared with that using a vortex discharge. The dependence of the spread of the output radiation and the focal distance of the thermal lens on the pumping power was investigated experimentally. The nature of the distribution of double refraction induced by optical pumping for the case of coincidence of the crystallographic plane [100] with the axis of the cylindrical active element is investigated. 10 ref. Authors' abstract.

1/1

– 22 –

1/2   024   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--SUBSTRUCTURE OF CRYSTALS STUDIED IN A CONVERGENT MICROBEAM -U-

AUTHOR-(03)-KOPETSKIY, CH.V., KLUYESKO, G.I., SHKIROV, V.S.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(4), 451-2

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--COPPER FOIL, CRYSTAL STRUCTURE, X RAY ANALYSIS, CRYSTAL
  LATTICE DISLOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0907   STEP NO--UR/0032/70/036/004/0451/0452

CIRC ACCESSION NO--AP0131493
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131493
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD AND APP. ARE DESCRIBED
FOR PHOTOGRAPHY OF SMALL REGIONS OF CRYSTALS WITH A CONVERGENT MICROBEAM
OF WHITE X RADIATION. AN ANGULAR RESOLN. OF SIMILAR TO 5 PRIME IS
ACHIEVABLE FOR THE ANGLE OF MISORIENTATION OF THE CRYSTAL BLOCKS.   THE
SIZE OF THE CRYSTAL BLOCKS, AS WELL AS THE D. OF DISLOCATIONS OF A GIVEN
SIGN, CAN BE ESTD. THE METHOD WAS USED TO FOLLOW THE CHANGE OCCURRING
DURING ANNEALING OF CU FOIL. THE MIN. BLOCK SIZE OBSD. WAS 3-5 MU, IN
GOOD AGREEMENT WITH THE RESULTS OF METALLOGRAPHIC STUDIES.
FACILITY: INST. FIZ. TVERD. TELA, CHERNOGOLOVKA, USSR.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--FIRST SYNTHESIS OF NATURAL PHOSPHATIDYL-MYO-INO-SITOL -U-

AUTHOR-(05)-ZHELVAKOVA, E.G., KLYASHCHITSKIY, B.A., SHVETS, V.I.,
  YEVSTIGNEYEVA, R.P., PREOBRAZHENSKIY, N.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1) 248

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL SYNTHESIS, GLYCEROL, PHOSPHORUS COMPOUND, SPECTRUM,
  BIOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1419   STEP NO--UR/0079/70/040/001/0248/0248

CIRC ACCESSION NO--AP0112413
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0112413

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF
2,3,4,5,6,PENTA,O,BENZYL,SYN,MYO,INOSITOL WITH PHOPOCL SUB2 AND
1,2,DI,PALMITOYL,SN,GLYCEROL IN C SUB5 H SUB5 N GAVE 32PERCENT
1,D,(1,2,DIPALMITOYL,SN,GLYCERYL,(PHENYL,PHOSPHORYL),2,3,4,5,
6,PENTA,O,BENZYL,SN,MYO,INOSITOL, M. 53-4PERCENT.   HYDROGENOLYSIS OVER
ADAMS PT CATALYST AND PD BLACK GAVE THE PHOSPHORYL ANALOG, ISOLATED AS
NH SUB4 SALT, M. 169-72PERCENT.   THIS GAVE SPECTRA VERY SIMILAR TO THOSE
OF NATURAL MONOPHOSPHOINOSITIEDS.

UNCLASSIFIED

1/2   034   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--IRREVERSIBLE BRAKING AND DIRECT COMPRESSION JUMPS IN ADIABATIC
    STREAMS OF REAL GAS -U-
AUTHOR-(02)-DOBRODEYEV, V.P., KLYACHKIN, A.L.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, TEPLOENERGETIKA, NO 3, 1970, PP 87-89

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--REAL GAS, ADIABATIC FLOW, ADIABATIC COMPRESSION, IRREVERSIBLE
    THERMODYNAMICS, REVERSIBLE THERMODYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1669   STEP NO--UR/0096/70/000/003/0087/0089

CIRC ACCESSION NO--AP0104891
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0104891
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYTICAL DEPENDENCES WERE
  ESTABLISHED BETWEEN THERMODYNAMIC PARAMETERS OF REVERSIBLE AND
  IRREVERSIBLE ADIABATIC BRAKING OF REAL GAS FOR USE IN THE ANALYSIS OF
  DIRECT JUMPS. TWO ILLUSTRATIONS. BIBLIOGRAPHY: FIVE REFERENCES.

UNCLASSIFIED

USSR

KLYACHKIN, V. I.

UDC 551.596;534-143

"On the Characteristic Functionals of Certain Hydroacoustical Fields"

Tr. 2-y Vses. shkoly-seminara po stat. gidroakustike (SG-2) (Works of the
2d All-Union School-Seminar on Statistical Hydroacoustics (SG-2)), Novo-
sibirsk, "Nauka", 1971, pp 60-90 (from RZh-Fizika, No 10, Oct 72, Abstract
No 10Zh621)

Translation: Contents: Introduction. 1. Probability description of sto-
chastic fields. 2. Elements of the analytical mechanics of stochastic wave
fields. 3. Equations for characteristic functionals. 4. Characteristic
functionals in linear problems. (a. Excitation of an elastic shell by a
system of surface random loads. b. Excitation of an elastic shell by a sys-
tem of voluminal and surface sources. c. Characteristic functionals of the
radiation field of a statistically oscillating surface. d. Characteristic
functionals of the pressure fields and vibrational velocities in an acous-
tical medium). 11 ref.

1/1

USSR

KLYACHKIN, V. I., and USOSKIN, G. I., Leningrad

UDC 534.231

"Sound Projection by Interacting Elastic Shells"

Moscow, Akusticheskiy Zhurnal, Vol 17, No 4, 1971, pp 574—581

Abstract : An analysis is presented of the problem of vibrations and sound projection by arbitrary shells forming a combined system, owing to the interaction through a medium. This problem can be led to a system of integro-differential equations of the order equal to the number of investigated shells. The solution of such system offers considerable difficulties; in connection with that, the problem of combined vibrations of elastic shells has been discussed in the literature in the most simple formulation, in particular for two parallel located plates. A closed form solution of the problem of combined vibrations and sound projection by a system of arbitrary shells is presented in which the system of integro-differential equations is solved in a general form with the help of a series of Green's auxiliary functions of shell vibrations. The expression for the sound projection field of interacting shells is presented in form of quadratures, containing Green's functions of Helmholtz's equation, and shell vibration equations. The application of the described solution method is discussed for the case of one and two shells. One illustr., 22 formulas, five biblio. refs.
1/1

USSR

UDC 536.46+662.311

ZAKHAROV, V. M. and KLYACHKO, L. A.

"Concerning the Combustion Rate of a Model Gunpowder Mixture"

Novosibirsk, Fizika Goreniya i Vzryva, No 1, 1972, pp 15-26

Abstract: This paper deals with the combustion scheme of a model 2-component gunpowder mixture, consisting of finely divided potassium nitrate and charcoal. It is found that the position of the concentration limits of the combustion of a model gunpowder mixture is determined by the temperature equality of the combustion products within the zone of influence of the ignition temperature of the mixture, namely the temperature of the transition of potassium nitrate into nitrite ($T_f \approx 1,000$ K). Increased pressure increases the combustion rate, as does also an increase of the initial gunpowder temperature. An opinion is given with regard to the heretofore unexplained influence of the addition of sulfur upon the combustion rate of smoke powder. The combustion rate is said to increase due to the formation of K_2S in the combustion products, instead of K_2O, thus releasing approximately 40% more heat and liberating more oxygen for oxidation of the charcoal. 5 figures, 18 references.

1/1

USSR

UDC: 621.762

SAMSONOV, G. V., DZODZIYEV, G. T., KLYACHKO, L. I., VITRYANYUK, V. K., Kiev
Polytechnical Institute, Uzbek Refractory and Heat Resistant Metal Combine

"Effect   of Molybdenum on Properties of Metal Ceramic Hard TiC-Ni Alloys"

Kiev, Poroshkovaya Metallurgiya, No 4, 1972, pp 57-60.

Abstract: A systematic study is performed of the effect   of alloying
TiC-Ni alloys with molybdenum over a broad concentration interval on their
structure and physical-mechanical properties. It is established that the
optimal properties are achieved with 20 vol. % Mo in the binder, the bonding
strength of the alloys varying between 105 and 180 kg/mm^2, depending on the
total content of Mo, with hardnesses of from 92 to 85 HRA. As to wear resist-
ance, the alloys with hardness with 92 HRA are two to three times superior
to standard T15K6 alloy for cutting of type 50 steel.

1/1

K

Cardiovascular Diseases

USSR

KLYACHKO, V., Special Correspondent of Trud, Vilnius

"A Probe Penetrates the Heart"

Moscow, Trud, 2 Aug 70, p 3

Abstract: A new method for testing suspected congenital heart defects, to find out whether surgery is indicated and to locate the openings in the partition between the heart chambers is described. The method was developed by Iu. Rugenyus and others. V. Kleyz, Lithuanian Minister of Health, acknowledged the value of the new method. A microprobe with an electrode, which can be introduced into the heart via the vein on the hand, is used. An ordinary electrocardiograph shows its progress. The whole process takes 15-20 minutes and local anesthesia is sufficient. Later it was found that the graph of the electrode's potential changes reflects the amount of hydrogen (inhaled by the patient for the test) in the blood. Thus, accurate testing for defects may be carried out without introducing the probe into the heart.

1/1

USSR

KLYACHKO, S.D.

"Affine Transformations Between Problems on Minimum Weight in Theory of Elasticity and Plasticity"

Translation: It is shown that certain problems on minimum weight in the theory of elasticity, plasticity and viscous elasticity are invariant with respect to the affine transformation of space, that is each of these problems after an affine transformation is converted to a similar problem on finding a body of minimum weight, but with different material and location of loads. By solving a problem having such a property, the affine problem is "auto-matically" solved. The requirements of the latter are easily obtained from the requirements of the former.

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1/2   027

UNCLASSIFIED

TITLE--THE LIVER FUNCTION IN DISEASES OF THE THYROID GLAND -U-

PROCESSING DATE--11SEP70

AUTHOR--KLYACHKO, V.R., MIRKHODZHAYEV, A.KH.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 3, PP 35-38

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER FUNCTION, THYROID GLAND, GOITER, THYROID HORMONE, HEMODYNAMICS, BLOOD CIRCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1691

STEP NO--UR/0241/70/015/003/0035/0039

CIRC ACCESSION NO--AP0101746

UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0101746

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE RESULTS OF INVESTIGATION OF THE HEPATIC CIRCULATION, THE PROPORTION OF ITS PARTICIPATION IN MINUTE BLOOD VOLUME, SECRETORY ACTIVITY OF POLYGONAL CELLS, RATE OF BILE FORMATION AND PATENCY OF BILE DUCTS. ON THE BASIS OF THE DATA DERIVED IT WAS ESTABLISHED THAT IN SPORADIC NODULAR EUTHYROID GOITER NO DISTURBANCES OF THE LIVER FUNCTION WERE OBSERVED; IN THYROTOXICOSIS DISTURBANCES WERE ASSOCIATED NOT ONLY WITH THE SPECIFIC ACTION OF EXCESS OF THYROID HORMONES, BUT ALSO WITH THE RELATIVE INSUFFICIENCY OF ITS BLOOD SUPPLY; IN HYPOTHYROSIS FUNCTIONAL DISORDERS OF THE LIVER WERE MAINLY ASSOCIATED WITH ALTERATION OF THE CENTRAL HEMODYNAMICS AND HEPATIC BLOOD CIRCULATION.

UNCLASSIFIED

UNCLASSIFIED

TITLE--NEUROLOGICAL DISTURBANCES IN PATIENTS HAVING PRIMARY HYPOTHYROIDISM
  -U-

PROCESSING DATE--04DEC70

AUTHOR-(02)-KLYACHKO, V.R., PRIKHOZAN, V.M.

COUNTRY OF INFO--USSR

SOURCE--PROBL ENDOKRINOL 16(2): 24-29. ILLUS. 1970.

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NEUROLOGY, THYROID GLAND, NERVOUS SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605015/811   STEP NO--UR/0502/70/016/002/0024/0029

CIRC ACCESSION NO--AP0140560

UNCLASSIFIED

CIRC ACCESSION NO--AP0140560   UNCLASSIFIED   PROCESSING DATE--04D

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. CLINICO NEUROLOGICAL EXAMINATION
WAS CARRIED OUT IN 81 PATIENTS SUFFERING FROM PRIMARY HYPOTHYROIDISM;
THE INCIDENCE OF DISTURBANCES OF THE CENTRAL AND THE PERIPHERAL NERVOUS
SYSTEM WAS ESTABLISHED. DYNAMIC OBSERVATION OF THE PATIENTS AGAINST THE
BACKGROUND OF EXPRESSED CLINICAL PICTURE, AND DURING REMISSION, CAUSED
BY THE ADMINISTRATION OF TRIIODOTHYRONINE, DEMONSTRATED THAT SOME
NEUROLOGICAL SYMPTOMS WERE ASSOCIATED WITH FUNCTIONAL DISTURBANCES
(BRADIPHRENIA, APATHY, SOMNOLENCE, LACK OF FACIAL EXPRESSION,
BRADYKINESIA, VOLTMAN'S SYMPTOM, PARASTHESIAS), AND SOME WITH ORGANIC
LESIONS (HEARING IMPAIRMENT, PATHOLOGICAL REFLEXES, ANISOREFLEXIA,
REDUCTION OF THE ACHILLES REFLEX). THE INCIDENCE OF ORGANIC
SYMPTOMATICS CORRELATED WITH THE DURATION OF HYPOTHYROIDISM AND THE
PATIENTS' AGE.   FACILITY: INST. EXP. ENDOCRINOL, CHEM. HORMONE,
ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

SAVITSKIY, YE. M., and KLYACHKO, V. S.

Metally Kosmicheskoy Ery (Space Age Metals), Moscow, Sovetskaya Rossiya, 1972, 189 pp

Translation of Introduction: Some call our century the atomic century, others -- the space age, still others -- the age of synthetic materials. But if we are to be true to tradition and give the epoch a name according to the main material from which the tools of labor are basically prepared, then it is far more accurate to call our time as it was previously, the iron age or the age of metal, which remains the number 1 material -- the carcass, the framework of all mankind's material culture, the backbone of industry.

In fact, every year more than 600 million tons of metal are produced in the world, that is, more than 150 kilograms for every inhabitatn of our planet. Today in use by mankind are several billion tons of metal products. And all the synthetic materials taken together so far have replaced no more than 6 percent of the metal.

Metals possess a whole series of properties which are not found in any other materials. Glass is hard, but brittle. Resin is plastic but not lasting. Only metals combine durability and plasticity at the same time. They can be processed well by casting and pressure (forging, stamping, pressing,

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USSR

SAVITSKIY, YE. M., and KLYACHKO, V. S., Space Age Metals, Moscow , Sovetskaya Rossiya, 1972, 189 pp

and extrusion); they can be cut and welded. If they did not possess such a complex of properties, the creation of nearly all machines and mechanisms would simply be impossible.

Many metals are heat resistant, and chemically stable; they possess high electric conductivity and other valued qualities.

Take, for example, the magnetic properties of metals. Without the magnetic needle of the compass seagarers, geologists, and tourists would lose theyr way. Without the permanent magnet in the spark plug the motors of automobiles, airplanes, and tractors would not start. Without iron cores there would be no electrogenerators, electric motors, or transformers. And that means that power stations would cease working; electric trains and street-cars, lathes and machines would stop; the electric lights and the television screens in homes would go out; radio receivers and telephones would fall silent, etc., etc. In a word, life without magnetic materials is now inconceivable...

The power of space rockets many times exceeds the power of the greatest hydroelectric power stations. Concentration of such monstrous force in a comparatively small volume was successful only by sharply increasing the temperature and pressure in the combustion chamber. For this special materials

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USSR

SAVITSKIY, YE. M., and KLYACHKO, V. S., Space Age Metals, Moscow, Sovetskaya Rossiya, 1972, 189 pp

were necessary. At the present time the power ceiling of rocket engines is determined not only by fuel possibilities but also by the capability of the combustion chamber materials to maintain stability during high temperatures and pressures.

When a space ship, returning to earth, penetrates the dense layers of the atmosphere, colossal temperatures and pressures also develop on it sur-faces. The safety of the ship depends on materials capable of withstanding them.

Materials which are durable at ultra-high temperatures and pressures are also necessary for MHD generators, which have higher efficiency in direct relationship to the working temperatures, and for apparatuses which synthesize diamonds, and in many, many other branches of technology.

Atomic energy requires materials which are not only able to withstand high temperatures, but are also durable in a zone of penetrating radiations and in aggressive chemical environments.

Electronics and radio technology also need super conductors and total isolators of electric current, and converters of heat energy into electricity and many other materials which possess at times incompatible properties.

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USSR

SAVITSKIY, YE. M., and KLYACHKO, V. S., Space Age Metals, Moscow, Sovetskaya
Rossiya, 1972, 189 pp

In the Directives of the 24th Congress of the CPSU on the Five-Year Plan
for the Development of the National Economy of the USSR for 1971-1975, the crea-
tion and assimilation of the most economical new materials was given as one
of the basic tasks of Soviet science and technology.

To guarantee each branch the metallic materials necessary to it -- such
is the most important task of metallurgists and metal researchers today. Their
seeking, discoveries, and successes will also be the subject of the present
book. In creating it the authors have attempted to show that, together with
other interesting and important areas for creative application of the intellec-
tual and physical forces of people there exists the most complex, attractive,
and ceaselessly developing "metal economy" -- one of the bases of civiliza-
tion. Its development to a significant degree determines the living standard
and the tempo of progress of the entire country and each of us.

The authors thank professor A. P. Gulyayev for his valuable comments
made during preparation of the manuscript for publication.

Table of Contents:

Material No 1. Introduction

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USSR

SAVITSKIY, YE. M., and KLYACHKO, V. S., Space Age Metals, Moscow, Sovetskaya Rossiya, 1972, 189 pp

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USSR

NIFANT'YEV, E. Ye., FILIMONOVA, R. D., KLYACHKO, Yu. A.

"Method of Production of Acid Phosphites of Amylopectin"

Otkrytiya Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 355180.

Translation: 1. Method of production of acid phosphites of amylopectin, differing in that the amylopectin is interacted with lower dialkyl phosphite upon heating with subsequent separation of the end product by known methods.
　　2. Method according to Claim 1, differing in that the process is performed at 100-120°C.
　　3. Method according to Claim 1, differing in that the process is performed in the presence of catalytic quantities of sodium.
　　4. Method according to Claim 1, differing in that the process is performed in a medium of an organic solvent such as tetrahydrofuran.

1/1

ACC. NE.

AP0049521   Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code

4R0032

102891v Studying the occlusion of hydrogen by steel under stress. Klyachko, Yu. A.; Barg, I. G.; Starchak, V. G.; Kuslitskii, A. B. (L'vov. Politekh. Inst., L'vov, USSR). Zavod. Lab. 1970, 36(1), 40-2 (Russ). H, when occluded by steel, reduces ductility while increasing brittleness and likelihood of corrosion cracking. Previous expts. were carried out on the H occlusion by unstressed steel and the quant. detn. of the vol. of occluded H. The present investigation used the same techniques except that the sample studied was placed in a special fixture which stressed it over radii of 60, 120 and 240 mm. The length of sample exposed to cathodic polarization in 10% H_2SO_4 at a c.d. of 0.1 A/cm^2 was 20 cm with the ends rendered non-conductive by a lacquer or paraffin. H content was detd. by collecting the gas evolved when the sample was anodically treated in an electrolyte comprising NaK tartrate and NaCl. Stressed samples always occluded more H than the undistorted samples, while other factors such as steel compn., production techniques, heat treatment, annealing temp., and impurities altered the abs. vol. of occluded H.   Herman Koretzky

REEL/FRAME
19801384

USSR

MISHIN, I. V., KLYACHKO-GURVICH, A. L., BRUYEVA, T. R., and RUBINSHTEIN, A. M.,
Institute of Organic Chemistry imeni N. D. Zelinskii, Acad. Sc. USSR

"The Technique for Improving the Adsorption Capacity of the Sodium Form of
Mordenite."

Abstract: Treatment of the starting plant preparation of the mordenite (I) with
2N HCl produces the H-form (II), which can be recationized to the original
composition (III). It was shown that (III) has adsorption capacity approaching
that of (II) -- identical with the "wide-porous" NaM described in literature.
Initial heats of adsorption of benzene for (I) and (III) are similar, those of
(II) being lower.

1/1

USSR   UDC 621.376.326.

GORSHKOV, YE. S., KLYAGIN, L. YE., Active Members of the Scientific and
Technical Society of Radio Engineering, Electronics and Communications imeni
A. S. Popov

"A Single-Band Resistance-Capacitance Frequency Converter"

Abstract: A device without inductances or transformers is proposed for
shaping a single-band signal. Micromodular construction gives a device
with considerably lower cost and overall dimensions than similar devices with
inductanes and transformers with the same qualitative indices. Side-band
suppression is at least 36 dB for a modulating frequency band of 300-3400 Hz,
and carrier frequency suppression is at least 40 dB. Frequency suppression
is by the phase-difference method. The device consists of low- and high-
frequency phase shifters and a single-band frequency multiplier. A method
is given for calculating the parameters of the converter and selecting
circuit elements. The resultant formulas are confirmed by experimental data.

1/1

USSR

UDC: 621.376.2

KLYAGIN, L. Ye., GORSHKOV, Ye. S.

"A Wide-Band RC Phase Shifter"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 51, pp 71-78 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D310)

Translation: A procedure is given for calculating a wide-band phase shifter with a minimum number of elements to be used for devices for shaping a single-band signal by the phase difference method. Two voltages which are equal in amplitude with a predetermined phase difference are produced at the output of the phase shifter. The proposed phase shifter differs from conventional units in the increased width of the frequency band and a lower phase difference error. Resumé.

1/1

UNCLASSIFIED

TITLE--APPROXIMATION METHODS FOR CALCULATING INTEGRALS CONTAINING A TWO CENTER DISTRIBUTION SMALLER THAN PHI SUBA PHI SUBB. II. USE OF THE

PROCESSING DATE--04DEC70

AUTHOR-(03)-KLYAGINA, A.P., DYATKINA, M.YE., BOBRYSHEVA, N.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 95-8 (RUSS)

DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS

TOPIC TAGS--APPROXIMATION METHOD, ATOMIC PROPERTY

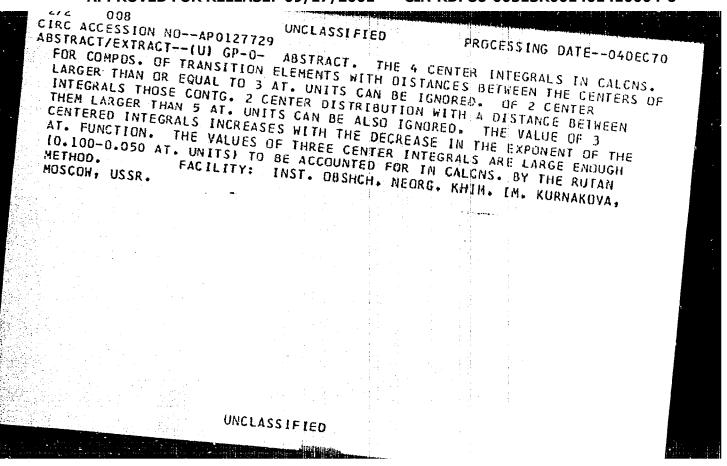CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0103

STEP NO--UR/0192/70/011/001/0095/0098

CIRC ACCESSION NO--AP0127729

UNCLASSIFIED

272   008
CIRC ACCESSION NO--AP0127729   UNCLASSIFIED   PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 4 CENTER INTEGRALS IN CALCNS.
FOR COMPOS. OF TRANSITION ELEMENTS WITH DISTANCES BETWEEN THE CENTERS OF
LARGER THAN OR EQUAL TO 3 AT. UNITS CAN BE IGNORED. OF 2 CENTER
INTEGRALS THOSE CONTG. 2 CENTER DISTRIBUTION WITH A DISTANCE BETWEEN
THEM LARGER THAN 5 AT. UNITS CAN BE ALSO IGNORED. THE VALUE OF 3
CENTERED INTEGRALS INCREASES WITH THE DECREASE IN THE EXPONENT OF THE
AT. FUNCTION. THE VALUES OF THREE CENTER INTEGRALS ARE LARGE ENOUGH
(0.100-0.050 AT. UNITS) TO BE ACCOUNTED FOR IN CALCNS. BY THE RUTAN
METHOD.   FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA,
MOSCOW, USSR.

UNCLASSIFIED

KLYAGINA, V.P.

biophysics

UNCLASSIFIED

SECTION III   So: Selected Aerospace ...
Faculties

FCS-79
SEPT 71

Name: Institute of Biophysics, Pushchino
Description:

(U) During this quarterly reporting period, 25 new articles were identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the Institute. These personalities, the subjects of the articles, and the dates are given below:

All-biophysics / physics

Altyeva, S. A.	photophorylation	1971 (34)
Apikayeva, G. F.	radiation effect	1970 (35)
Aripova, D. F.	radiation effect	1971 (36)
Arkipa, Ya. I.	hypoxia	1969 (37)
Bregudze, I. P.	radiation effect	1970 (37)
Busel, Ye. P.	luminescence	1970 (38)
Dmitriyeva, T. I.	radiation effect	1970 (39)
Dmitriyeva, V. A.	blood plasma	1969 (40)
Domareva, O. P.	radiation effect	1970 (39)
Dubrov, A. P.	biochemical analysis	1971 (41)
Gabelova, N. A.	muscle physiology	1971 (42)
Ganasi, Ye. E.	radiation effect	1970 (35)
Ivkova, M. N.	serum albumin	1971 (43)
Kanatkin, V. S.	phosphorylation	1971 (34)
Khokhlova, G. K.	muscle physiology	1971 (44)
Kislov, A. N.	salivary gland	1970 (45)
Klyagina, V. P.	oligonucleotide	1970 (46)
Korol, B. A.	radiation effect	1971 (44)
Kosheleva, G. N.	biochemical analysis	1971 (41)

6

UNCLASSIFIED

Ki...ina, S. V.
Markovich, D. S.
Medvedeva, I. F.
Peshkova, L. V.
Pronzvich, L. A.
Rodionova, M. A.
Shchipakin, V. N.
Skobeyev, Ya. M.
Tsvetkov, V. D.
Uurikhina, N. V.
Viljenchik, M. M.
Zamyatnin, A. A.

tissue culture	1970 (47)
lactate dehydrogenase	1971 (4?)
radiation effect	1971 (44)
phosphorylation	1971 (49)
antibiotic	1970 (50)
mitochondrion	1971 (51)
phosphorylation	1971 (49)
radiation/vibration	1970 (52)
radiation effect	1970 (35)
blood plasma	1969 (40)
lactate dehydrogenase	1971 (48)
radiation effect	1970 (53)
muscle physiology	1971 (42)

Dubrov and Kosheleva (41) are associated with the Laboratory of Cell Biophysics at the Institute. Reference 52 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (54-58) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 55 associates the authors of the article, L. V. Slozhanikina, V. L. Migushina, and A. M. Kuzin, with the Department of Radiobiology at the Institute.

USSR

UDC 547.963.3+542.91

ZHENODAROVA, S. M., KLYAGINA, V. E., Institute of Biological Physics, Academy of Sciences USSR, Pushchino-na-Oke, Moskovskaya Oblast:

"Stepwise Synthesis of Oligonucleotides. VII. Enzymatic Synthesis of Anomalous Diribunucleosidemonophosphates"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2124-2127

Abstract: The following diribonucleosidemonophosphates with anomalous base or anomalous carbon atom were synthesized by enzymatic reaction with ribonuclease: 5-bromouridyl-(3'-5')-uridine, uridilyl-(3'-5')-5-chlorouridine, uridilyl-(3'-5')-6-azauridine, uridilyl-(3'-5')-desoxythimidine, uridilyl-(3'-5')-2',3'-O-isopropylideneuridine and uridilyl-(3'-5')-uridine. The mixtures of corresponding substrates and acceptors (at a ratio of 1:4) were incubated in a tris buffer (pH 7.6) in the presence of pancreatic ribonuclease (36 ug/ml) at 0° for 24 hrs. The products were purified by paper chromatography or paper electrophoresis. The authors thank O. A. SMOLYANINOV for conducting some of the syntheses. 1/1

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1/2   024
UNCLASSIFIED
TITLE--A VACUUM ARC DISCHARGE WITH A HIGH COMBUSTION VOLTAGE -U-
PROCESSING DATE--18SEP70

AUTHOR-(02)-KLYARFELD, B.N., POKROVSKAYASOBOLEVA, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL TEKHNICHESKOI FIZIKI, VOL. 40, JAN. 1970, P. 205-210

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--VACUUM ARC, ARC DISCHARGE, LUMINESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1615

STEP NO--UR/0057/70/040/000/0206/0210

CIRC ACCESSION NO--AP0047937

UNCLASSIFIED

CIRC ACCESSION NO--AP0047937
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE DISCHARGE STAGES
PRECEDING TOTAL BREAKDOWN OF A VACUUM DISCHARGE GAP IN THE PRESENCE OF
LARGE ADDITIONAL RESISTANCES IN THE CURRENT CIRCUIT [FROM 1000 TO
1,000,000 OHMS). CURRENT AND VOLTAGE OSCILLOGRAMS SHOWED THE EXISTENCE
OF A SHORT TERM ARC DISCHARGE WITH A COMBUSTION VOLTAGE OF SEVERAL
KILOVOLTS AT A CURRENT INTENSITY OF 1.3 ANGSTROMS. BY PHOTOGRAPHING THE
LUMINESCENCE IN THE DISCHARGE GAP, IT WAS REVEALED THAT A SPOT
CHARACTERISTIC OF THE ARC AND SURROUNDED BY A LESS BRIGHT LUMINESCENCE
IS PRESENT AT THE CATHODE, WHILE A LUMINESCENT REGION FILLING A
CONSIDERABLE PORTION OF THE GAP IS PRESENT AT THE ANODE. BETWEEN THE
LUMINESCENCES AT THE CATHODE AND THE ANODE IS A DARKER SPACE IN WHICH
THE GAS AND VAPOR DENSITY IS EXTREMELY LOW. AN APPROXIMATE CALCULATION
OF THE THICKNESS OF THE DOUBLE LAYER BETWEEN THE PLASMAS AT THE CATHODE
AND THE ANODE GIVES VALUES CLOSE TO THE THICKNESS OF THE DARK SPACE.
THIS GIVES RISE TO THE ASSUMPTION THAT THE HIGH VALUE OF THE COMBUSTION
VOLTAGE OF AN ARC DISCHARGE IS CAUSED BY A LARGE POTENTIAL DIFFERENCE
OCCURRING ON THE DOUBLE LAYER.

USSR

UDC 614.777:661.718.5

KLYASHCHITSKAYA, A. L. KRASOVSKIY, G. N., and FRIDLYAND, S. A.,
First Moscow Medical Institute imeni I. M. Sechenov

"Hygienic Evaluation of Industrial Effluents Containing Organosilicon
Compounds"

Abstract: Toxicological studies on polymethylhydro siloxane, sodium
ethylsiliconate, and 10 other organosilicon compounds in the effluents
of the Dankovskiy Chemical Plant showed that they are virtually non-
toxic. The biological activity of the compounds is independent of
the radical bound with silicon, and is determined by the length of
the polymer chain and its molecular weight. Compounds with methyl,
ethyl, and phenyl radicals as well as compounds whose organic radi-
cals contain fluorine, chlorine, sulfur, or cyanogen, were nontoxic.
The monomer A_3SiH, low-molecular-weight sodium siliconate, and hexa-
methylpolydimethylpolymethyl (trifluoropropyl) siloxane with a small
number of structural units exhibited high biological activity. The
main negative feature of the compounds is that they impart a dis-
agreeable odor and taste to water.
1/1

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UDC 622.323(477)6)

USSR

SKRIPNIK, V. A., ZHELEZNOV, P. A., KLYAROVSKIY, G. V., and KISEL',
V. A.

"Prospects for Development of Lelyakov Petroleum Deposits With Consi-
deration of Liquid Overflow Between the P_{1+2} and P_3 Strata"

Abstract: Three levels of oil deposits are being exploited in Lelya-
kov area: P_{1+2}, P_3, and K_1. P_{1+2} yields 1.5-30 t/day, P_3 -- 15-210
tons per day, while K_1 is only of secondary importance. Oil overflows
from P_3 level to P_{1+2} where there is no clay barrier between them, and
in wells exploiting both levels. The pressure in P_{1+2} layer is about
26-30 kG/cm^2 lower than in P_3. Lelyakov deposits are among the rich-
est ones in Ukraine. It is proposed to increase the yield to about
200-250 t/day by drilling more wells, and preventing the overflow from
P_3 to P_{1+2} by building up the pressure in P_{1+2} through the input of
water. It has been calculated that approximately 3 million m^3 of
water per year will be needed to keep the pressure in P_{1+2} at 160 kG/cm^2.
1/1

HYGIENIC ASSESSMENT OF CONDITIONS OF DISCHARGE OF INDUSTRIAL EFFLUENTS CONTAINING SILICON ORGANIC COMPOUNDS

Klyashchitskaya, A.L.; Krasovskiy, G.N.; Fridlyand, S.A.

Effluents from the production of silicon organic polymers have a complex compositions: organic solvents and silicon organic compounds are peculiar ingredients of their contamination. Toxicologic tests revealed biological inactivity of silicons containing methyl, ethyl and phenyl radicals, as well as groups of compounds whose organic radicals contained fluorine, chlorine, sulfur and cyan. Compounds with a small number of structural units had a high biological activity. The maximum permissible concentrations of the 13 investigated silicon organic polymers in water bodies were determined judging by the organoleptic index.

REEL/FRAME

19680900

KLYASHCHITSKIY, B. A., PIMENOVA, V. V., BASHKATOVA, A. I., ZHELVAKOVA, E. G.,
SOKOLOV, S. D., SHVETS, V. I., YEVSTIGNEYEVA, R. I., PREOBRAZHENSKIY, N. A.,
Deceased, Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov

"Research in the Area of Derivatives of Asymmetrically Substituted Myoinositol.
V. Complete Synthesis of sn-Myoinositol 1-Phosphate"

Abstract: A new method is used for synthesizing 1,2,4,5,6-penta-O-benzylmy-
oinositol. The compound is separated into antipodes through diastereomeric
orthoesters with D-mannose. Complete synthesis of the 1-phosphate of sn-myoin-
ositol identical to the natural compound is carried out on the basis of 2,3,4-
5,6-penta-O-benzyl-sn-myoinositol.

USSR

KLYASHCHITSKIY, B. A., STAROSTINA, A. K., SHVETS, V. I., and YEVSTIGNEYEVA, R. P., Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov,

"Study of the Synthetic Routes of Polyphosphoinositide"

Abstract: Synthesis of polyphosphoinositides -- the most important representatives of inosite phosphatides -- is tied closely to the resolution of optically active di-O-cyclohexylidenemyoinosites into optical antipodes. One such possibility is described for the case of 1,2:5,6-di-O-cyclohexylidenemyoinosite which yielded optically active antipodes through diastereomeric ortho-acetates of D-mannose: 1,2:5,6-di-O-cyclohexylidene-sn-myoinosite, $[\alpha]_D^{20}$ -7.4° and its enantiomer 2,3:4,5-di-O-cyclohexylidene-sn-myoinosite, $[\alpha]_D^{20}$ +7.5°, both melting at 130-140°C.

1/1

TITLE--SYNTHESIS OF OPTICALLY ACTIVE PENTABENZYL ETHERS OF MYO INOSITOL.
  TOTAL SYNTHESIS OF PHOSPHATIDYLINOSITOL WITH NATURAL STRUCTURE -U-

AUTHOR-(05)-KLYASHCHITSKIY, B.A., ZHELVAKOVA, E.G., SHVETS, V.I.,
  EVSTIGNEEVA, R.P., PREOBRAZHENSKIY, N.A.

COUNTRY OF INFO--USSR

SOURCE--TETRAHEDRON LETT. 1970, (8), 587-90

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--OPTIC ACTIVITY, POLYNUCLEAR HYDROCARBON, BENZENE DERIVATIVE,
  ORGANIC PHOSPHORUS COMPOUND, ETHER, GLYCEROL, FATTY ACID, CHEMCIAL
  SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1509   STEP NO--UK/0000/70/000/008/0587/0590

CIRC ACCESSION NO--AP0101593
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0101593
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS TREATED WITH PHOP(O)CL SUB2
   AND 1,2 DIPALMITOYL SN GLYCEROL TO GIVE II. II IS HYDROGENATED OVER
   ADAMS CATALYST AND PD BLACK TO GIVE 1,0, (MICROFICHE OF ABSTRACT
   CONTAINS GRAPHIC INFORMATION) (1',2' DIPALMITOYL SN 3'
   GLYCERYLPHOSPHORYL) SN MYO INOSITOL (III) WHICH HAS A NATURAL
   STRUCTURE.

UNCLASSIFIED

1/3   009   UNCLASSIFIED   PROCESSING DATE--30OCT70

TITLE--ASYMMETRICALLY SUBSTITUTED MYO INOSITOL DERIVATIES. I. SEPARATION
   OF A RACEMIC MIXTURE OF 1,4,5,6,TETRA,O,BENZYLMYO, INOSITOL. COMPLETE

AUTHOR-(05)-KLYASHCHITSKIY, B.A., STRAKHOVA, G.O., SHVETS, V.I., SOKOLOV,
   S.O., PREOBRAZHENSKIY, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 236-42

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, BROMINATED ORGANIC COMPOUND, ESTER,
   CHEMICAL SEPERATION, CARBOHYDRATE, ISOMER/(U)AMBERLITE IRA400 MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1737   STEP NO--UR/0079/70/040/001/0236/0242

CIRC ACCESSION NO--AP0112726
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0112726
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   SYRUPY
   TETRA-O-ACETYL-BETA-D-MANNOPYRANOSYL BROMIDE (14 G) KEPT WITH 9.1 ML
   2,6,LUTIDINE IN ETOH 3 HR GAVE AFTER EVAPN. AND AN AQ. TREATMENT
   67.5PERCENT 3,4,6,TRI-O-ACETYL 1,2,O-(ETHYL
   ORTHOACETYL)-BETA-D-MANNOPYRANOSE, M. 102.5-4DEGREES, (ALPHA) PRIME20
   SUBD MINUS 15DEGREES, WHICH (5.95 G) WITH 4.6 G
   1,4,5,6,TETRA-O-BENZYLMYO INOSITOL REFLEXED IN (CH SUB2 CL)SUB2 IN THE
   PRESENCE OF P-MEC SUB4 H SUB4 SO SUB3 H 8.5 HR WITH REMOVAL AND
   REPLENISHMENT OF THE DRIED SOLVENT, GAVE 18.6PERCENT
   3,4,6,TRI-O-ACETYL,1,2,O,(3,4,5,6,TETRA-O-BENZYL-SN
   MYO-INOSITYL,1,ORTHOACETYL)-BETA-D-MANNOPYRANOSE, M. 155.5-6DEGREES,
   (ALPHA) PRIME20 SUBD 9.8DEGREES, PPTD. BY ADDN. OF ET SUB2 O; THE
   FILTRATE PURIFIED ON AL SUB2 O SUB3 GAVE 9.6BPERCENT
   3,4,6,TRI-O-ACETYL,1,2,O-(1,4,5,6,TETRA-O-BENZYL-SN MYO-INOSIT,3,YL
   ORTHOACETYL)-BETA-D-MANOPYRANOSE (I), M. 135-7DEGREES, (ALPHA) PRIME20
   SUBD 0.54DEGREES.   I IN 1 HR AT 20DEGREES WITH 0.1N H SUB2 SO SUB4 IN
   90PERCENT AQ. ME SUB2 CO GAVE AFTER PASSAGE OVER AMBERLITE IRA-400 (OH
   FORM) 81.2PERCENT 1,4,5,6,TETRA-O-BENZYL-SN-MYO-INOSITOL, M.
   140.2-2.1DEGREES, (ALPHA) PRIME20 SUBD 25DEGREES.   SIMILARLY WAS
   OBTAINED 86PERCENT 3,4,5,6,TETRA-O-BENZYL-SN-MYO INOSITOL, M.
   141-3DEGREES, (ALPHA) PRIME20 SUBD MINUS 24.3DEGREES. THIS HEATED 2 HR
   AT 100DEGREES WITH MEI AND POWD. KOH UNDER C SUB6 H SUB6 GAVE 25PERCENT
   L-O-METHYL,3,4,5,6, TETRA-O-BENZYL-SN-MYO-INOSITOL, M. 1 5-16DEGREES,
   (ALPHA) PRIME20 SUB3 MINUS 1.5DEGREES, WHILE THE MOTHER LIQUOR GAVE
   5.3PERCENT 2,O-METHYL ANALOG, M. 137-8DEGREES, (ALPHA) PRIME20 SUBD

UNCLASSIFIED

CIRC ACCESSION NO--AP0112726
ABSTRACT/EXTRACT--THE L-ISOMER WAS HYDROGENATED OVER PD IN ACOH TO
   L-O-METHYL-SN-MYO-INOSITOL, M. 204-5.5DEGREES, (ALPHA) PRIME2O SUBD
   MINUS 33.2DEGREES, INDENTICAL WITH ANTURALLY OCCURING (-).BORNESITOL.
   THUS AN EFFECTIVE SEPN. OF RACEMIC ASYM. SUBSTITUTED MYO-INOSITOLS WAS
   PERFORMED VIA DIASTEREOMERIC ORTHO ESTERS WITH D-MANNOSE.

UNCLASSIFIED

USSR   UDC: 621.396.62.01

KLYATSKIN, I. G.

"On a Paradox in the Theory of Receiving Antennas"

Translation: The author considers power conversion in a receiving antenna of the symmetric dipole type comprised of a conductor with infinite conductivity loaded at the midpoint. The boundary condition is refined for the electric field at the surface of the dipole. Bibliography of one title.
N. S.

1/1

USSR   UDC: 621.37/.39:061.6.08(07.07)

KLYATSKIN, I. G.

"On the Training of Radio and Communications Engineers in the Decades of
the Immediate Future"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Educational Institutes
of Communications. Ministry of Communications of the USSR), 1970, vyp. 50
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A12)

Translation: It is noted that the disadvantages of existing academic plans
stem chiefly from the relatively short time of instruction (it is proposed
that an instruction time of 5 years 10 months be instituted in place of the
4 year 10 month period). The necessary corrective measures which should be
introduced into academic plans and programs are discussed; this applies
first and foremost to intensifying physical and mathematical preparation.
The five most important areas which typify radio electronics of the decades
of the immediate future are pointed out (integrated circuitry and thin
films, computers, quantum electronics, discrete data transmission, develop-
ment of equipment for the millimeter and submillimeter range). These areas
are making new demands on training of radio and communications engineers.
A. K.

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- 7 -

Pulse Technique

USSR   UDC: 621.313.3.004.5:621.376.5

TSESARUK, N. Ya., KOSTROMIN, V. K., KLYATSKIN, M. G., MAMEDOV, V. I.

"A Method of Monitoring the Generation of a Control Command From a Pulse-Duration Modulator by the Armature of an Electromagnetic Drive Which Does not Have its Own Contact Groups"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 21, 1970, Author's Certificate No 274222, filed 20 Jun 69, p 57

Abstract: This author's certificate introduces a method of monitoring the generation of a control command from a pulse-duration modulator by the armature of an electromagnetic drive which does not have its own contact groups. Monitoring is accomplished by forming electrical pulses corresponding to the times when armature motion is completed. As a distinguishing feature of the patent, the reliability of monitoring is assured by using the above-mentioned electric pulses to form a pulse signal corresponding to the generated command, and comparing this signal with the control command signal with respect to phase shift and frequency.

1/1

USSR   UDC: 538.56:519.25

KLYATSKIN, V. I. and TATARSKIY, V. I., Institute of Atmospheric Physics

"Statistical Theory of the Propagation of Light in a Turbulent Medium"

Abstract: This paper is a review of the theoretical work that has been done in the field of the propagation of electromagnetic waves in a medium with random large-scale nonuniformities. It is divided into two parts: the first deals with the general view of light propagation in a turbulent medium and considers a stochastic equation describing the process of wave propagation in a random medium to yield some precise conclusions; the second considers a model in which the longitudinal correlation radius of the dielectric permeability can be neglected in comparison with all the longitudinal dimensions of the problem. This latter assumption is equivalent to replacing the real correlation function of the index of refraction by the delta function in the longitudinal direction and permits obtaining a set of closed integral equations for all moments of the wave field. Also discussed in this survey are the
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USSR

KLYATSKIN, V. I., et al, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1433-1455

approximation of geometrical optics, diffusion in randomly non-uniform media, and amplitude-phase fluctuations of the light wave. A bibliography of 48 titles is appended.

USSR   UDC 621.371:535

KLYATSKIN, V. I., KON, A. I., Institute of Physics of the Atmosphere of the
USSR Academy of Sciences

"Displacements of Spatially Limited Light Beams in a Turbulent Medium in the
Approximation of a Random Markov Process"

Abstract: A study was made of the problem of fluctuations of the position of
the center of gravity of a light beam in a randomly inhomogeneous medium in
the approximation of a Markov random process. The mean square displacement of
the center of gravity is defined for a turbulent model of the medium and a
gaussian beam. In the far zone these expressions differ significantly from
the ones obtained in the approximation of the smooth perturbation method.
     The basic apparatus developed by V. I. Tatarskiy [Rasprostraneniye koro-
tkikh voln v srede so sluchaynymi neodnorodnostyami v priblizhenii markovskogo
sluchaynogo protsessa, USSR Academy of Sciences, Department of Oceanology,
Physics of the Atmosphere and Geography, Preprint, 1970] was used to calculate
the displacements of the center of gravity of the light beams. The fluctua-
tions of the position of the center of gravity are defined by two effects:
1/2

USSR

KLYATSKIY, V. I., et al., Izvestiya, vysshikh uchebnykh zavedeniy, Radiofizika,
Vol XV, No 9, 1972, pp 1381-1388

the mean broadening of the beam and the fluctuations of the intensity with re-
spect to the same broadening of the mean profile. The first effect is the
primary one, and a mathematical description of it is presented. A graph of
the function $f(\beta)$ obtained as a result of numerical integration of the turbu-
lent spectrum of the fluctuations of the dielectric constant is presented where
$\beta = \alpha C_\varepsilon^2 k^{1/3} x^{8/3} a^{-5/3}$ ($\alpha = 0.27$, k is the wave numer, x is the two-dimensional
field vector, a is the beam width).

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USSR

KLYATSKIN, V. I., TATARSKIY, V. I. (Institute of Physics of the Atmosphere, USSR Academy of Sciences)

"Approximation of a Parabolic Equation in Problems of Wave Propagation in a Medium with Random Inhomogeneities"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1970, pp 624-634 .

Abstract: Propagation of monochromatic light in a medium with large-scale (compared to wave length) inhomogeneities in dielectric permeability is considered for the case in which depolarization is small and the scalar wave equation can be applied. The solution can be written in an operator form or as a continuous integral by applying the Fradkin technique. If the probability distribution of the dielectric permeability is Gaussian, averaging can be carried out and expressions can be obtained for the mean field strength, mutual coherence function, etc. The approximation of the parabolic equation and of inhomogeneities, delta-correlated along the direction of propagation of the wave (Markovian model), is considered for the case in which the continuous integrals for the mean field and the mutual coherence functions can be evaluated

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USSR

KLYATSKIN, V. I., TATARSKIY, V. I., Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, February 1970, pp 624-634

and explicit expressions can be derived for these quantities. By writing the
solution of the total scalar equation in the form of a continuous integral,
one can find the corrections to the solution of the parabolic equation for
the mean field and on their basis formulate the conditions of applicability
of the parabolic approximation. Besides the well-known, purely "geometric"
conditions, the condition of smallness of scattering per wave length and
smallness of the radius of the first Fresnel zone compared with the extinc-
tion length arises.

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CSO: 1862-W   - END -

KLYATSKIY V.I.

ON THE PARABOLIC EQUATION APPROXIMATION IN PROBLEMS ON PROPAGATION OF WAVES IN A MEDIUM WITH RANDOM INHOMOGENEITIES

Klyatskin, V. I.; Tatarskiy, V. I.

Propagation of monochromatic light in a medium with large scale (compared to wavelength) dielectric permeability inhomogeneities is considered for the case when depolarization is small and the scalar wave equation can be applied. The solution can be written in an operator form or as a continual integral by applying the Fradkin technique. If the distribution of the dielectric permeability probabilities is Gaussian, averaging can be carried out, and expressions can be obtained for the mean field strength, mutual coherence function etc. The approximation of the parabolic equation and of inhomogeneities delta-correlated along the direction of propagation of the wave (Markovian model) is considered in the case when the continual integrals for the mean field and the mutual coherence functions can be evaluated and explicit expressions can

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AP0043791

be derived for these quantities. By writing the solution of the total scalar equation in the form of a continual integral one can find the corrections to the solution of the parabolic equation for the mean field and on their basis formulate the conditions of applicability of the parabolic approximation. Besides the well known purely geometric conditions, the condition of smallness of scattering per wave length and smallness of the radius of the first Fresnel zone compared to the extinction length arises.

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USSR   UDC   621.318.57

KONYAYEV, S. I., KLYAUS, Kh. I., MISHIN, A. I., Institute of Mathematics,
Siberian Department of the Academy of Sciences of the USSR

"A Thin-Film Switching Element"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
1970, No 36, Soviet Patent No 288152, class 21, filed 21 Apr 69, published
3 Dec 70, p 85

Translation: This Author's Certificate introduces a thin-film switching
element with Ag-Se-Al structure. As a distinguishing feature of the patent,
the number of stable states is increased by making the dielectric film with
a stepwise variable thickness.

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USSR   UDC   621.326.77

KONYAYEV, S. I., KLYAUS, Kh. I., Institute of Mathematics, Siberian Department of the Academy of Sciences of the USSR

"A Method of Making Thin-Film Memory Elements"

Translation: This Author's Certificate introduces a method of making thin-film memory elements based on Soviet Patent No 244398. As a distinguishing feature of the patent, the method is designed to improve the stability of the actuating threshold voltage, increase the amplitude of the actuating threshold voltage and commutating current, and shorten the technological cycle. To achieve these goals, an amorphous dielectric film is precipitated on a metal film in an atmosphere of elemental selenium.

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- 45 -

UNCLASSIFIED   PROCESSING DATE--13NOV70

1/2   038
TITLE--THIN FILM COMMUTATION ELEMENT -U-

AUTHOR-(02)-KONYAYEV, S.I., KLYAUS, KH.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 5, 1970, PP 1112-1113

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MATERIALS

TOPIC TAGS--ELECTRODE, ALUMINUM, INDIUM, DIELECTRIC MATERIAL, SILICON
DIOXIDE, METAL ION, ELECTRIC FIELD, THIN FILM SEMICONDUCTOR, VOLT AMPERE
CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0616   STEP NO--UR/0109/70/000/005/1112/1113

CIRC ACCESSION NO--AP0132776
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0132776
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE DESCRIBES A METAL
DIELECTRIC METAL DEVICE, MADE BY VACUUM DEPOSITION ON AN INSULATING
SUBSTRATE, PROVIDING A SWITCHING CHARACTERISTIC WITH A SECTION OF S TYPE
NEGATIVE RESISTANCE IN THE FORWARD PART OF THE VOLT AMPERE
CHARACTERISTIC AND A SECTION OF N TYPE IN THE INVERSE PART. THIS
CHARACTERISTIC IS SHOWN IN AN ACCOMPANYING OSCILLOGRAM. THE ARTICLE
OFFERS EXPERIMENTAL DATA OBTAINED FROM RESEARCH ON THE FILM, WHICH USES
INDIUM FOR ONE ELECTRODE, ALUMINUM FOR THE OTHER, AND A SIO SUBX, SE
SYSTEM AS THE DIELECTRIC. AN EXPLANATION IS GIVEN OF THE FILM OPERATION
MECHANISM, WHICH IS CONNECTED WITH THE MIGRATION OF METALLIC IONS UNDER
THE INFLUENCE OF THE ELECTRIC FIELD.

UNCLASSIFIED

Microelectronics

USSR

UDC: 621.316.5--416

KONYAYEV, S. I. and KLYAUS, Kh. I.

"Thin-Film Commutation Element"

Moscow, Radiotekhnika i Elektronika, No 5, 1970, pp 1112-1113

Abstract: This article describes a metal-dielectric-metal device, made by vacuum deposition on an insulating substrate, providing a switching characteristic with a section of S-type negative resistance in the forward part of the volt-ampere characteristic and a section of N-type in the inverse part. This characteristic is shown in an accompanying oscillogram. The article offers experimental data obtained from research on the film, which uses indium for one electrode, aluminum for the other, and a SiO_x, Se system as the dielectric. An explanation is given of the film operation mechanism, which is connected with the migration of metallic ions under the influence of the electric field.

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UDC 621.315.592

USSR

SHAPOCHANSKAYA, Z.V., KONYAYEV, S.I., KLYAUS, Kh.I.

"Capacitive Characteristics of a Thin-Film Switching Element Based on Selenium"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 822-824

Abstract: Experimental data are presented from a study of the capacitance of a thin-film switching element with a Ag-Se-Al structure as a function of illumination, variable voltage frequency, and fixed bias. The range of light wavelengths causing variation in capacitance of the illuminated specimen is determined. A model of a two-layer capacitor was used to interpret the results obtained. The observed variations in the capacitance can arise from the presence of a photodielectric effect and the presence of traps in the selenium.

The source of illumination used in the experiment was an incandescent lamp with a tungsten filament, and the illumination varied from 0 to 30,000 lux.

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USSR

SHAPOCHANSKAYA, Z.V., et al, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 822-824

The sharpest variation in capacitance was caused by a wavelength of 500-750 microns which corresponds to energies of 2.2-1.6 electron volts. It is pointed out that in the investigated Ag-Se-Al structure the selenium layer is an amorphous dielectric in which there can be regions absorbed by silver (possibly, Ag_2Se). This complex dielectric can be represented by an equivalent schematic of a two-layer capacitor. The formula for calculating the resultant capacity of this layer is presented, and its effect is interpreted by this mechanism.

2/2

USSR

VAVILOV, V. S., KLYAVA, YA. G., KOSHELEV, O. G., TYAPKINA, N. D., Moscow
State University Imeni M. V. Lomonosov

"Effect of Temperature and Superhigh Frequency on the Conductivity of Germanium
with Beryllium at Helium Temperatures"

Abstract: The authors investigate the temperature dependence of conductivity
(σ) and the effect of superhigh frequency ($\lambda = 3$ cm) on σ in P-type ger-
manium doped with beryllium and phosphorus at 1.45-4.2°K. In this region the
relationship $\sigma(T)$ may be approximated by the formula $\sigma = \sigma_0 \exp(-\mathcal{E}/kT)$.
Both $\mathcal{E}$ and σ_0 are studied as functions of $r_A = [3/4\pi(2N_{Be} - N_p)]^{1/3}$ (N_{Be}
and N_p are the concentrations of beryllium and phosphorus). With a reduction
in r_A, $\mathcal{E}$ decreases, disappearing when $r_A = 40-50$ Å. Within the limits of
measurement precision, the relationship $\sigma_0(r_A)$ may be represented by the
expression $\sigma_0 = C \exp(-2r_A/a_2)$, where $C \approx 3 \cdot 10^3 \Omega^{-1} \cdot cm^{-1}$, and $a_2 \approx 17$ Å.
An increase in σ ($\Delta\sigma$) was observed which was proportional to the SHF power.
In the linear region of voltage-current characteristics, $\Delta\sigma$ is independent
of the amplitude of the DC field, and $\Delta\sigma/\sigma$ changes by only an order of
magnitude with a change in σ by seven orders of magnitude. The relationship
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VAVILOV, V. S., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 9, Sep 70, pp 1683-1688

between $\Delta\sigma$ and the SHF modulation frequency is studied. In low-resistance specimens, $\Delta\sigma$ decreases by half when f = 30 kHz. This inertness indicates that $\Delta\sigma$ is chiefly bolometric in nature. The authors thank V. L. Bonch-Bruyevich and N. A. Penin for interest in the work and for discussing it, T. Yu. Lisovskaya for assisting with the experiment, and V. Ye. Kuvshinova for preparing the specimens and carrying out the Hall measurements.

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USSR   UDC   539.37.5

KLYAVIN, O. V., NIKIFOROV, A. V., Physicotechnical Institute imeni A. F.
Ioffe, USSR Academy of Sciences

"Observation of Localized Heating of Slip Bands When Crystals are Deformed
in Liquid Helium"

Abstract: Localized liberation of heat was observed in calcium-doped
sodium chloride crystals during deformation in liquid helium from the
effect of helium boiling (formation of gas bubbles) on the heated sections
of the crystal surface. Heating was observed on both edge and Burgers
slip bands. It was found that the slip process does not occur in all
slip bands simultaneously. The short lag of bubble formation enables
studying the dynamics of the slip process during crystal deformation di-
rectly in liquid helium. In principle, the bubble method is suitable for
studying the elementary phenomena of plasticity of any materials (including
opaque materials) at different temperatures. Liquids with appropriate
thermal properties must be selected for this purpose.

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ZHITARU, R. P., KLYAVIN, O. V., SMIRNOV, B. I.

"Effect of Gamma Irradiation on the Mechanical Characteristics and Dislocation Structure of LiF Crystals Deformed at 4.2-300°K. Part II. Dislocation Structure"

Abstract: Dislocation structures are studied in deformed and gamma-irradiated lithium fluoride crystals at 4.2-300°K. The crystals were selectively etched in a weak solution of ferric chloride. Initial dislocation density was approximately 10^4 per sq. cm. The results showed that the displacement of the slip bands increases linearly with yield stress in irradiated crystals. The rate of increase in displacement is the same at 78 and 4.2°K, and increases considerably at 300°K. The density N of dislocation pits in the slip bands also increases, $\sqrt{N}$ being a linear function of yield stress. As the deformation temperature is reduced, the slope of the lines for $\sqrt{N}$ decreases for both screw dislocations and edge dislocations, except that the relation for screw dislocations shows no difference at 4.2 and 78°K. The free run of

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ZHITARU, R. P. et al., Izv. AN MoldSSR, Ser. Fiz.-Tekhn. i Mat. Nauk, No 3, 1972, pp 15-21

screw dislocations decreases with an increase in radiation dose and with a reduction in temperature. The reciprocal of the free run is a linear function of yield stress. The slopes of the lines for the latter relation are constant for all temperatures. Irradiating the crystals increases the probability of primary and secondary transverse slip at all temperatures. The change in parameters of the dislocation structure of slip bands is apparently due to an increase in the number of "stoppers", which oppose the motion of the dislocations themselves, and change the parameters of transverse slip of the dislocations. Coagulation of defects with larger doses of radiation is the most probable cause of the reduction in rates of change of these parameters with increased dose. Qualitatively, the irradiation of lithium fluoride crystals influences the parameters of the dislocation structure in the same way as does doping the crystal with magnesium. The authors thank T. V. Samoylova for consultation, and P. O. Barabtarlo for assisting with the electron microscope measurements of dislocation density.

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1/2   023   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--STRESS RELAXATION AND DISLOCATION MOBILITY IN LITHIUM FLUORIDE
  CRYSTALS DEFORMED AT 300 TO 4.2DEGREESK -U-
AUTHOR--KLYAVIN, O.V., SMIRNOV, B.I., CHERNOV, YU.M.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRESS RELAXATION CURVES WERE
STUDIED FOR LOADED LIF CRYSTALS DEFORMIT AT 300 TO 4.2DEGREESK.
SPECIMENS WERE DEFORMED IN COMPRESSION AT 300, 78, AND 4.2DEGREESK USING
A SPECIAL APP. AND OPTICAL CRYOSTAT WHICH ALLOWS THE PROCESS OF PLASTIC
FLOW OF THE CRYSTALS TO BE FOLLOWED BY THE POLARIZATION OPTICAL METHOD
DIRECTLY AT LIQ. HE TEMPS. THE OPTICAL ELASTIC LIMIT TAU SUBS, THE
YEILD STRESS TAU SUBS, AND THE MAGNITUDE OF STRESS TAU SUBM AT WHICH THE
RELAXATION CURVE WERE RECORDED. DEFORMATION TOOK PLACE ALONG
(110)(110). IN THE PROCESS OF STRESS RELAXATION IN THE LOADED CRYSTAL,
ELASTIC DEFORMATION OF THE SYSTEM (MACHINE PLUS SPECIMEN) EPSILON SUBE
DECREASES DUE TO THE PLASTIC DEFORMATION OF THE SPECIMEN EPSILON SUBP;
EPSILON SUBP EQUALS MINUSP-ML, WHERE M IS THE HARDNESS OF THE SYSTEM, L
IS THE SPECIMEN LENGTH, AND P IS THE LOAD. THE ACTIVATION VOL. WAS
CALCD. FROM THE EXPTL. RELATION P(T). THE CURVE OF THE VELOCITY OF THE
DISLOCATION MOTION VS. STRESS IN LIF CRYSTALS BECOMES STEEPER WITH
DECREASING TEMP. DOWN TO 4.2DEGREESK. THE ACTIVATION VOL., WHICH DETS.
THE MOTION OF THE DISLOCATIONS, DECREASES SHARPLY WITH INCREASING
DEFORMING STRESS INDICATING A STRONG DEPENDENCE OF THE ACTIVATION ENERGY
OF THE PROCESS OF DEFORMATION ON STRESS.

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USSR

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Volga-Ural Branch of the All-Union Scientific Research Institute of Geo-
physical Exploration Methods, and the Bashkir Scientific Research and
Planning Institute of the Petroleum Industry

"Influence of the Strength of Cement Rock on the Form of Acoustic-Logging
Cementograms"

Moscow, Bureniye, No 5, 1972, pp 25-28

Abstract: Acoustic-logging cementograms, recorded during a period of relative
stabilization of the process of cement-rock formation, indicate a relationship
between the amplitude of the longitudinal waves A_p and the strength of the
cement block. It is shown that the form of acoustic-logging cementograms made
during measurements in the period of hardening of the cement solution and the
start of fixation of the cement block depends upon the time between the moment
of measuring and the end of cementation of the well, and determination of the
quality of the cement ring on the basis of measurements during this period is
possible only with knowledge of the dynamics of the acoustic values which
characterizes the specific state of the hardening mixture in the well under
given conditions. 3 figures. 1 table.
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